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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,340	09/23/2003	Stefan Preijert	0173.038.PCUS01	2339
65858	7590	10/01/2009	EXAMINER	
NOVAK DRUCE AND QUIGG LLP (Volvo) 1000 LOUISIANA STREET FIFTY-THIRD FLOOR HOUSTON, TX 77002			COZART, JERMIE E	
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/605,340	PREIJERT ET AL.
	Examiner	Art Unit
	Jermie E. Cozart	3726

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 30 June 2009.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 18-36 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) 26 and 27 is/are allowed.

6) Claim(s) 18-25 and 28-36 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) Notice of Informal Patent Application

6) Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claim 35 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In claim 35, the second blank (14) is described as being "*substantially flat in that it lacks a cavity but that otherwise matches the contours of an upper, joining surface of the first blank*," however, as depicted in figure 2, the blank (14) is clearly shown as having a recess/cavity and therefore is not substantially flat as described in claim 35. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 18-25, 28-34, and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider et al. (2,674,783) in view of Lee et al. (5,934,544).

Regarding **claim 18**, Schneider discloses a method for producing a vehicle axle (11) by heating (col. 5, lines 29-32) the blank (35) to a working temperature (1800 °F; col. 5, line 31); feeding the first blank (13) to a forging press (see Fig. 15 and 16) having a number of cooperating die pads (85, 41), and working the first blank (13) by die forging to form a substantially finished product having a cross section substantially in the form of a hat profile of predetermined height, width and material thickness along a length thereof; placing in connection with the hat profiled first blank (13), a second blank (12) having essentially the same profile as the hat profile of the first blank (13) in the dividing plane of the cooperating die pads; and joining (col. 7, line 74 – col. 8, line 4) the first (13) and the second blank (12) together, at respective edges thereof, and forming a composite vehicle axle.

Regarding **claim 19**, Schneider discloses at least the first blank (13) being forged vertically (col. 5, lines 55-70) with respect to a principal plane in which the composite vehicle axle is intended to be used.

Regarding **claim 20**, Schneider discloses the forging operation comprising a first step (col. 5, lines 55-70) in which a pair of first cooperating die pads form the material in the first blank (13) such that the first blank material acquires a predetermined, varying height in a vertical plane along a longitudinal extent thereof and the first blank further acquires a basic principal shape in the principal plane in which the composite vehicle axle is intended to be used.

Regarding **claim 21**, Schneider discloses the forging operation further comprises an additional step in which a pair of second cooperating die pads (col. 6, lines 5-11)

form the material in the first blank (13) to a predetermined, varying thickness along a side surface, bottom surface and upper edge surface of the profile along a longitudinal extent thereof.

Regarding claim 22, Schneider disclose the additional step of the forging operation is repeated at least one time in successive die pads until the first blank (13) has acquired a final shape.

Regarding claim 23, Schneider discloses that the second blank (12) being preformed in one of a separate forging operation to have substantially the same profile (13) as the hat profile of the first blank in a dividing plane of the die pads.

Regarding claim 24, Schneider discloses the first and the second blanks (13, 12) are formed in a joint forging operation (col. 7, lines 3-14) in which the second blank is formed to the same profile as the hat profile of the first blank in a dividing plane of the die pads.

Regarding claim 28, Schneider discloses further comprising: cutting flashes (col. 8, lines 19-20) along the joined edges of the profile in the same operation as for joining together the first and second blank, the profile acquiring a predetermined varying width along a longitudinal extent thereof.

Regarding claim 29, Schneider discloses the vehicle axle comprises a first section (35, 36) having a cross section substantially taking the form of a hat profile of a predetermined, varying width, height and material thickness along a length thereof and a second section (15) having an essentially constant material thickness and being joined together with the first section along side surfaces of the hat profile.

Regarding claim 30, Schneider discloses the vehicle axle is constructed from a micro alloyed steel (i.e. SAE 1035 steel; col. 5, lines 12-23).

Regarding claim 31, the vehicle axle in Schneider appears to constitute a front axle beam (see Fig. 1).

Regarding claim 34, Schneider discloses directing a first blank (13) to a working temperature; feeding the first blank (13) to a forging press having a number of cooperating die pads, and working the first blank (13) by die forging to form a substantially finished product having a cross section substantially in the form of a hat profile of predetermined height, width and material thickness along a length thereof; placing in connection with the hat profiled first blank (13), a second blank (12) having a substantially constant material thickness; and joining the first (13) and the second blank (12) together at respective edges thereof and forming a composite vehicle axle (see Fig. 1), with the second blank (12) forming a lid for the first blank (13).

Regarding claim 36, Schneider discloses directing a first blank through a furnace and heating the blank to a working temperature; feeding the first blank to a forging press having a number of cooperating die pads, and working the first blank by die forging to form a substantially finished product having a cross section substantially in the form of a hat profile of predetermined height, width and material thickness along a length thereof; directing a second blank through a furnace and heating the second blank to a working temperature; feeding the second blank to a forging press having a number of cooperating die pads, and working the second blank by die forging to form a substantially finished product having a cross section substantially in the form of a hat

profile of predetermined height, width and material thickness along a length thereof; placing in connection with the hat profiled first blank the second blank, which has essentially the same profile as the hat profile of the first blank in the dividing plane of the cooperating die pads; and joining the first and the second blank together at respective edges thereof and forming a composite vehicle front axle.

Schneider, however, does not disclose the following: directing the first blank or second blank between a pair of rollers having profiled surfaces thereby forming the first blank into an intermediate product having a predetermined profile along a longitudinal extent thereof; joining the blanks together by forge welding; a maximum material thickness of the front axle beam is obtained in connection with fastening points and regions which are to be subjected to external forces and moments; or the cross section of the front axle beam has essentially the same outer contours in both the vertical and horizontal planes as a conventionally forged, solid beam.

Lee discloses directing a first blank (18) between a pair of rollers (102, 104) having profiled surfaces thereby forming the first blank into an intermediate product having a predetermined profile along a longitudinal extent thereof, in order to roll form the blank into a vehicular structural member having the desired shape. *See column 3, line 65 – column 4, line 2, and figure 6A for further clarification.*

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to direct a first blank of Schneider between a pair of rollers having profiled surfaces, in light of the teachings of Lee, in order to form the blank into a vehicular structural member having the desired shape.

Regarding claim 25, Schneider/Lee discloses seam welding the blanks together.

Schneider/Lee does not disclose forge welding.

At the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to join the first and second blanks of Schneider/Lee by forge welding because Applicant has not disclosed that joining the first and second blanks by forge welding provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with seam welding taught by Schneider/Lee because the blanks are effectively joining to one another.

Therefore, it would have been an obvious matter of design choice to modify Schneider/Lee to obtain the invention as specified in claim 25.

Regarding claims 32 and 33, these limitations have not been given patentable weight because they are structural limitations which do not affect the method in a manipulative sense.

Response to Arguments

5. Applicant's arguments filed 6/30/09 have been fully considered but they are not persuasive.

Applicants argue with respect to claim 35 that "The term "cavity" is referring to what may be called a hole or a hollow, which denotes the concept of a space that is bounded on, at the very least, all but one side. Such a hole or hollow is not what is shown in the second blank in Figure 2. Rather, as recited in the claim, the blank follows or matches the undulating contours of the mating surface of the flange on the first blank

as that flange dips and rises. Thus, Applicants submit that the claim is, in fact, supported by what is shown in Figure 2 and therefore request that the rejection be withdrawn.”

In response, the Examiner maintains that the term “cavity” is not defined in the specification, and as clearly shown in Figure 2 of the drawings, the blank 14 is not depicted as being substantially flat since it is clearly apparent from Figure 2 there are a number of depressions/recesses in the blank (14) and the depth of the depressions/recesses visually indicates that blank (14) is not substantially flat.

Applicants argue that none of the documents describe forming a pair of blanks having the same hat profile.

In response, the Examiner maintains that the first blank (13) and the second blank (12) each have the same hat profile of predetermined height, width and material thickness along a length thereof. The same hat profile for each of the blanks (12, 13) is clearly depicted in Figure 1, and furthermore although only the hat profile of the first blank (13) is depicted in figures 6-11, second blank (12) is a mirror image of the first blank (13), therefore each of the parts have the same hat profile in order to fit together to form the axle housing.

Applicants argue that Lee does not disclose roll forming a first blank but that Lee discloses forming a blank by roll-forming.

In response, the Examiner maintains that Lee discloses “directing a first blank (18) between a pair of rollers (102, 104) having profiled surfaces thereby forming the

first blank into an intermediate product having a predetermined profile along a longitudinal extent thereof,” as set forth in each of the independent claims.

Applicants argue that it would not have been obvious to have added a further, roll-forging step (as per Lee) into the complete, self-sufficient or stand-alone die-forging process of Schneider, and that the Examiner’s explanation as to why the claimed combination would have been obvious (“in order to form the blank into a vehicular structural member having the desired shape”) fails to address or explain that issue.

In response, the Examiner argues that Lee teaches the benefit of roll forming a blank to form the blank into a shape having increased impact resistance, therefore roll forming the blank not only provides the blank with the desired shape, it only provides impact resistance as a vehicular structural member. Therefore, it is apparent from the disclosure of Lee that there is an obvious advantage to roll forming a blank. Schneider, however, is silent with respect to whether or not roll-forming is performed. In addition, the disclosure of Schneider does not teach against roll-forming the blank prior feeding the blank to the forging press. The preliminary roll-forming taught by Lee aids in forming the blank into forming channel shaped member having a similar configuration of the intermediate member of Schneider. Finally the preliminary roll forming as taught by Lee provides a blank with increased impact resistance thereby ultimately allowing the blank to be deformed into a channel shaped vehicular structural member.

Allowable Subject Matter

6. Claims 26 and 27 are allowed.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jermie E. Cozart whose telephone number is 571-272-4528. The examiner can normally be reached on Monday-Thursday, 7:30 am - 6:00 pm.

9. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on 571-272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

10. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jermie E Cozart/
Primary Examiner, Art Unit 3726